

What is claimed is:

1. A method of making a coated substrate, comprising:
providing a substrate having a functional coating with a first emissivity value; and
depositing a coating material having a second emissivity value over at least a portion of the functional coating to provide a coating stack having an emissivity value greater than the emissivity value of the functional coating.
2. The method of claim 1, including heating the coated substrate.
3. The method of claim 1, wherein the coating material comprises 35 wt.% to 100 wt.% alumina and 0 wt.% to 65 wt.% silica.
4. The method of claim 1, wherein the coating material comprises 75 wt.% to 85 wt.% alumina and 15 wt.% to 25 wt.% silica.
5. The method of claim 1, wherein the coating material comprises 86 wt.% to 90 wt.% alumina and 10 wt.% to 14 wt.% silica.
6. The method of claim 1, including depositing the coating material to a thickness in the range of 100Å to 1.5 microns.
7. The method of claim 1, wherein the coating material has an index of refraction substantially the same as the index of refraction of the substrate.

8. The method of claim 1, wherein the substrate is glass, wherein the coating material comprises 35 wt.% to 100 wt.% alumina and 0 wt.% to 65 wt.% silica, and the method includes depositing the coating material to have a thickness in the range of 100Å to 1.5 microns and a refractive index of 1.5 ± 0.2 .

9. The method of claim 1, wherein the first emissivity value is different than the second emissivity value.

10. A method of making a laminated article, comprising the steps of:
providing a first substrate having a major surface;
applying a functional coating having an emissivity value over at least a portion of the first substrate major surface;
applying a protective coating over at least a portion of the functional coating to form a coating stack having an emissivity value greater than the emissivity value of the functional coating;
providing a second substrate;
heating the first and second substrates to desired shapes; and
laminating the first and second substrates together with an interlayer, with the protective coating facing the interlayer.

11. The method of claim 10, wherein the protective coating has a refractive index of less than 2.

12. The method of claim 10, wherein the protective coating has a refractive index about the same as the refractive index of the second substrate.

13. The method of claim 10, wherein the protective coating increases the emissivity of the coating stack to be in the range of 0.3 to 0.9.

14. The method of claim 10, wherein the protective coating increases the emissivity of the coating stack to greater than or equal to 0.5.

15. The method of claim 10, including adding a sufficient protective coating such that the emissivity of the coating stack is within 0.2 of the emissivity of the first substrate.

16. A method of making a coated article, comprising the steps of:
providing a coating having a predetermined infrared reflectance and a predetermined emissivity; and
altering the coating such that the emissivity increases but the infrared reflectance remains substantially the same.

17. A laminated article, comprising:
a first ply having a first major surface;
a functional coating deposited over at least a portion of the first major surface and having an emissivity value;
a protective coating deposited over at least a portion of the functional coating to form a coating stack having an emissivity, the protective coating configured to increase the emissivity of the coating stack over the emissivity of the functional coating alone;
a second ply; and
an interlayer located between the first and second plies, with the protective coating facing the interlayer.

18. The article of claim 17, wherein the first and second plies are selected from glass, plastic, and ceramic material.

19. The article of claim 17, wherein the protective coating has a refractive index in the range of 1.5 to 2.0.

20. The article of claim 17, wherein the protective coating increases the emissivity of the coating stack to be in the range of 0.3 to 0.9.

21. An article, comprising:
a substrate;
a functional coating deposited over at least a portion of the substrate; and
a protective coating deposited over the functional coating, wherein the functional coating and the protective coating define a coating stack and the protective coating provides the coating stack with an emissivity higher than the emissivity of the functional coating alone.

22. The article as claimed in claim 21, wherein the substrate is selected from glass, plastic, and ceramic.

23. The article as claimed in claim 21, wherein the article is an automotive transparency.

24. The article as claimed in claim 21, wherein the substrate has a thickness of 2 mm to 20 mm.

25. The article of in claim 21, wherein the functional coating has an emissivity of 0.1 or less.

26. The article of claim 21, wherein the protective coating increases the emissivity of the coating stack by at least a factor of two with respect to the emissivity of the functional coating.

27. The article of claim 21, wherein the protective coating increases the emissivity of the coating stack by a factor in the range of 2 to 20 compared to the emissivity of the functional coating.

28. The article as claimed in claim 21, wherein the functional coating has an emissivity of 0.1 or less and the coating stack has an emissivity of 0.5 or more.

29. The article as claimed in claim 21, wherein the emissivity of the coating stack is 0.5 to 0.8.

30. The article as claimed in claim 21, wherein the protective coating has a thickness of greater than 1 micron.

31. The article as claimed in claim 21, wherein the protective coating has a thickness of less than 5 microns.

32. The article as claimed in claim 21, wherein the protective coating comprises at least 35 weight percent alumina.

33. The article as claimed in claim 21, wherein the protective coating comprises 75 wt.% to 85 wt.% alumina and 15 wt.% to 25 wt.% silica.

34. The article as claimed in claim 21, wherein the protective coating comprises 86 wt.% to 90 wt.% alumina and 10 wt.% to 14 wt.% silica.

35. The article as claimed in claim 21, wherein the protective coating is solar absorbing in at least one of the UV, IR, or visible regions of the electromagnetic spectrum.

36. A monolithic automotive transparency, comprising:

- a glass substrate;
- a functional coating deposited over at least a portion of the glass substrate; and
- a protective coating deposited over the functional coating to form a coating stack, the protective coating comprising aluminum oxide having a thickness in the range of 1 micron to 5 microns and providing the coating stack with an emissivity of at least 0.5.

37. The transparency as claimed in claim 36, wherein the protective coating comprises 70 wt.% to 90 wt.% alumina and 10 wt.% to 30 wt.% silica.